

1 1. A cellular transceiver comprising:
2 a first digital decimation filter with N bands; and
3 a second digital decimation filter to reject N-1 bands coupled to
4 said first digital decimation filter for implementing a Global System for Mobile
5 communication mode.

1 2. The transceiver of claim 1 wherein said first digital decimation filter
2 may selectively implement a digital square-root-raised-cosine filter for a
3 Wideband Code Division Multiple Access mode.

1 3. The transceiver of claim 2 when said first digital decimation filter
2 and said second digital decimation filter are programmable tap filters.

1 4. The transceiver of claim 2 including a controller that selectively
2 programs said first digital decimation filter to provide an output for a Wideband
3 Code Division Multiple Access mode.

1 5. The transceiver of claim 4 wherein said first digital decimation filter
2 is coupled to a controller that is programmable to cause said first digital
3 decimation filter to output N bands for a Global System for Mobile
4 communication mode.

1 6. The transceiver of claim 4 wherein said first digital decimation filter
2 and said second digital decimation filter provide an output for a transceiver
3 receiving a Global System for Mobile communication signal and said first digital
4 decimation filter provides an output when the system is receiving a Wideband
5 Code Division Multiple Access signal.

1 7. The transceiver of claim 6 wherein said first digital decimation filter
2 is programmable to have either twenty-one or fifty-three taps.

1 8. The transceiver of claim 7 wherein said second digital decimation
2 filter has twenty-seven taps.

1 9. The transceiver of claim 1 including a memory that provides less
2 than all of the coefficients from said first filter to said second filter.

1 10. The transceiver of claim 8 wherein said memory provides less than
2 all of the coefficients from said first digital decimation filter to said second digital
3 decimation filter.

1 11. The transceiver of claim 1 wherein the output from said first digital
2 decimation filter and the output from said second digital decimation filter are
3 coupled to a multiplexer, the output of said multiplexer being selectively
4 controllable depending on the nature of the cellular system.

1 12. The transceiver of claim 10 wherein the output of said multiplexer
2 depends on whether the transceiver is utilized in a Global System for Mobile
3 communication or a Wideband Code Division Multiple Access system.

1 13. The transceiver of claim 12 wherein said controller selects the
2 output of the first digital decimation filter when the transceiver is located in a
3 Wideband Code Division Multiple Access system and selects the output of the
4 second digital decimation filter when the transceiver is in a Global System for
5 Mobile communication system.

1 14. The transceiver of claim 13 wherein the output from said second
2 digital decimation filter is a result of filtering by said first digital decimation filter
3 and said second digital decimation filter.

1 15. The transceiver of claim 12 using the same anti-alias analog filter
2 and analog-to-digital converter for both modes.

1 16. A method of receiving cellular signals comprising:
2 providing a pair of filtering stages;
3 selectively programming said first stage to filter a Wideband Code
4 Division Multiple Access signal or a Global System for Mobile communication
5 signal; and
6 using said second stage to filter the Global System for Mobile
7 communication signal.

1 17. The method of claim 16 including selectively setting the number of
2 taps in said first stage to provide a square-root-raised-cosine filter for a
3 Wideband Code Division Multiple Access mode.

1 18. The method of claim 16 including using said first stage to filter N
2 bands and said second stage to reject N-1 bands.

1 19. The method of claim 16 including detecting the type of signal that
2 has been received and then setting said first and second stages to filter the
3 signal depending on the type of signal.

1 20. The method of claim 19 including selectively filtering said input
2 signal depending on whether the input signal is for a Global System for Mobile
3 communications mode or a Wideband Code Division Multiple Access mode.

1 21. The method of claim 16 including providing less than all of the
2 coefficients from said first stage to said second stage.

1 22. The method of claim 16 including using the same anti-alias analog
2 filter and analog-to-digital converter for both the Wideband Code Division
3 Multiple Access and Global System for Mobile communication modes.

1 23. The method of claim 17 including setting the number of taps
2 depending on the type of signal received.

1 24. The method of claim 23 including setting the number of taps in said
2 first stage to 21 when a Wideband Code Division Multiple Access signal is
3 received.

1 25. The method of claim 24 including setting the number of taps in said
2 first stage to 53 when a Global System for Mobile communication signal is
3 received.

1 26. An article comprising a medium for storing instructions that cause a
2 processor-based system to:
3 selectively set the number of taps in a first filtering stage
4 depending on whether a Wideband Code Division Multiple Access signal or a
5 Global System for Mobile communication signal has been detected; and

6 select an output from either a first of two filtering stages or a
7 second of two filtering stages depending on whether a Wideband Code Division
8 Multiple Access or a Global System for Mobile communication signal is received.

1 27. The article of claim 26 further storing instructions that cause a
2 processor-based system to control a multiplexer to select the output of said first
3 or said second filtering stage as the output from said filtering stages.

1 28. The article of claim 26 further storing instructions that cause a
2 processor-based system to provide less than all of the coefficients from said first
3 stage to said second stage when a Global System for Mobile communication
4 signal is being received.

1 29. The article of claim 28 further storing instructions that cause a
2 processor-based system to set the number of taps in said first filtering stage at
3 twenty-one when a Wideband Code Division Multiple access signal is received
4 and at fifty-three when a Global System for Mobile communication signal is
5 received.

1 30. The article of claim 29 further storing instructions that cause a
2 processor-based system to store the coefficients from said first stage before
3 passing them to said second stage when a Global System for Mobile
4 communication signal is being received.